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INTEROFFICE CORRESPONDENCE

DATE February 12, 1990
TO Distribution
FROM F. D. Hobbs *FMD*
SUBJECT PLANTWIDE CONTROL OF INCIDENTAL WATER

CWAD-FH-146-90

Incidental water is a name for water which is derived from a variety of activities or sources. These include construction activities, groundwater pumping, valve vaults, areas near solid waste management units (SWMUs), secondary containment basins for tanks, and standing water in holes or depressions.

Per the attached January 10, 1990 interoffice correspondence, interim orders were implemented for incidental water control. Enclosed is a draft plan that expands on these orders. Please review this draft and return your comments by February 28, 1990 to Ralph Hawes in Building 250.

If you have any questions or require further information, contact Ralph Hawes, ext. 2582 or Leslie Dunstan ext. 5603.

RWH/ft

Attachment

Enclosure:
As Stated

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SW-A -002899



INTEROFFICE CORRESPONDENCE

DATE January 10, 1990
TO Distribution
FROM J. M. Kersh
SUBJECT ORDERS FOR PLANT-WIDE CONTROL OF SURFACE WATER DISCHARGES

CWAD-RH-101-90

The EG&G Clean Water Act Division of Environmental Restoration is developing a formal procedure for the plant-wide control of surface water discharges.

In the interim the following orders are to be implemented immediately.

If water is encountered during any construction activities involving excavation, the EG&G Construction Management and Inspection coordinator is to contact the EG&G Clean Water Act Division (formerly part of the Environmental Management Group) for assistance with determination of acceptable disposal methods.

If water is encountered in an area of suspected contamination, either chemical or radiological, the water is to be impounded and transferred to Liquid Waste Processing, Building 374. The water will be considered contaminated prior to laboratory analysis confirmation due to the lengthy processing times some analyses require. Solid Waste Management Units (SWMUs) and excavation in close proximity to underground process waste lines are considered potentially contaminated. In no case are these waters to be pumped to the storm or sanitary drain systems.

Waters encountered during excavations in areas with no history of contamination and remote from SWMUs require field nitrate and pH tests and collection of a sample for alpha and beta screening. This requirement excludes water that obviously originates as a drinking water source and runoff from precipitation events that have no possibility of contamination. The field test for nitrate and pH will be necessary prior to discharge to storm drains. If alpha and beta results are acceptable, the pumping of these waters may continue until there is a precipitation event when pumping must stop until the water is resampled.

To arrange for the collection of the water sample and the field test contact Leslie Dunstan, ext. 5603 or Ralph Hawes, ext. 2582. *1064*

If you have any questions or require further information, contact Farrel Hobbs, ext. 7006 or Ralph Hawes, ext. 2582.

RWH/lmc

**PLAN FOR CONTROL AND DISPOSITION
OF INCIDENTAL WATERS**

**ENVIRONMENTAL RESTORATION PROGRAM
ROCKY FLATS PLANT**

DRAFT

FEBRUARY, 1990

1.0 INTRODUCTION

The effective operation of the Rocky Flats Plant (RFP) involves several water management activities that may result in incidental waters requiring on-site treatment or discharge to storm drains or the ground. This water may originate as surface water, groundwater, utility water, or process water or wastewater from the following sources:

- Construction activities that require excavation below the groundwater table and subsequent groundwater pumping.
- Natural collection and subsequent pumping of precipitation and stormwater runoff in excavations, pits, trenches, ditches, or depressions that do not intercept the groundwater table.
- Collection of water in secondary containments, process waste valve vaults, electrical vaults, or manholes that requires pumping.

Water originating from these sources must be controlled, contained, sampled, analyzed, and treated or discharged according to the procedures developed by the RFP Environmental Restoration (ER) Program and described in this plan. Specific plans and procedures are already in place and utilized at the RFP for the control of water originating from the following additional activities or sources.

- Discharge of water from retention ponds A-4, B-5, and C-2 to downstream surface water or from Pond B-3 or the landfill pond to the ground during spray irrigation.
- Natural stormwater runoff discharging to storm sewers or ditches, retention ponds, or other on-site surface water.
- Sanitary Treatment Plant (STP) effluent discharge to Pond B-3.
- Leaks, spills, or unintended discharges from pipes, tanks, drums, or other equipment or man-made structures.
- Groundwater monitoring and assessment activities including the development, purging, sampling, or pumping of wells.

2.0 OBJECTIVES

The primary objective of this plan is to present a procedure for controlling, containing, sampling, analyzing, and treating or discharging incidental waters originating from the following RFP water management activities or sources:

- Construction activities that require excavation below the groundwater table and subsequent groundwater pumping.
- Natural collection and subsequent pumping of precipitation and stormwater runoff in excavations, pits, trenches, ditches, or depressions that do not intercept the groundwater table.
- Collection of water in secondary containments, process waste valve vaults, or manholes that requires pumping.

3.0 WATER SOURCES

A variety of RFP water management activities or sources may result in incidental waters that require on-site treatment or discharge to storm drains or the ground. These discharges have the potential of containing water quality parameters present at concentrations exceeding some specified acceptable levels. Such levels may be based on Colorado State Water Quality Standards, Applicable or Relevant and Appropriate Requirements (ARAR's) as defined by the U.S. Environmental Protection Agency (EPA) or other regulatory agencies, or some other type of RFP-defined levels. Consequently, the potential discharges must be controlled, contained, sampled and analyzed to determine if the quality of the water is acceptable for discharge or if the water should be treated prior to reuse, temporarily stored, or disposed of by some other method. The following activities or sources may result in incidental waters requiring the utilization of this plan.

3.1 Construction Activities that Require Excavation Below the Groundwater Table and Subsequent Groundwater Pumping

Excavation below the groundwater table during construction activities usually requires the continuous pumping of groundwater initially encountered in and flowing into the excavation. This water must be controlled, sampled and analyzed to determine if its quality is acceptable for discharge to storm drains or the ground. The excavation should be dewatered as soon as possible to prevent construction delays or problems. Section 4.0 of this plan discusses the procedures to be used for control and disposition of this water.

3.2 Natural Collection and Subsequent Pumping of Precipitation and Stormwater Runoff in Excavations, Pits, Trenches, Ditches, or Depressions that Do Not Intercept the Groundwater Table

At times precipitation and subsequent stormwater runoff collect naturally in construction excavations, pits, trenches, ditches, or depressions that do not intercept the groundwater table. This water may require pumping and discharge to storm drains or the ground to dewater the area for various reasons. The water must be controlled, sampled and analyzed to determine if its quality is acceptable for such discharge. Section 4.0 of this plan discusses the procedures to be used for control and disposition of this water.

3.3 Collection of Water in Secondary Containments, Process Waste Valve Vaults, Electrical Vaults, or Manholes that Requires Pumping

Water may collect in storage tank secondary containments, process waste valve vaults, electrical vaults or manholes that requires pumping. Control of water originating in secondary containments, electrical vaults or manholes will follow the procedures discussed in Section 4.0 of this plan. Water within process waste valve vaults is considered contaminated and must be transferred to the process waste treatment facility for treatment, as discussed in Section 4.4.

4.0 WATER CONTROL AND DISPOSITION PROCEDURES

Procedures utilized for the control of incidental waters should be followed by the responsible activity coordinator both during the planning stage prior to the actual start of an activity or project and during the operational stage and implementation of the activity.

4.1 Planning Stage

During the planning stage of any project, task, or operational activity that has the potential of encountering incidental waters that may be discharged to storm drains or the ground, the potential volume or flowrate of water from the source should be estimated from field surveys, topographic and groundwater table maps, existing hydrologic and engineering data, and engineering judgement. Equipment and personnel required for the control of the estimated volume of water should be obtained or be made available. This equipment should include the following:

- One or more pumps for transferring the water.
- 55-gallon drums for containing contaminated water if the volume is estimated to be relatively small (ie., less than about 500 gallons).

- Tanker trucks for containing contaminated water if the volume is estimated to be relatively large (greater than about 500 gallons).
- The Plan for Control and Disposition of Incidental Waters.

Personnel required for control of the water will include the following:

- A field crew provided by the responsible activity coordinator to obtain the equipment, transport it to the field site, pump the water to the containment equipment (if required), and to transfer, store, or discharge the water after sampling and analysis.
- A trained sampling crew provided by the Building 123 Laboratory to perform all of the required water quality sampling and associated procedures.
- One representative from the CWAD to coordinate the sampling crew and laboratory analysis, receive and interpret analytical results, and make decisions regarding the disposition of the water based on the analytical results. The CWAD representative will be contacted prior to the start of an activity where water is likely to be encountered and pumped. The contacts at the CWAD are listed in Attachment 1.

4.2 Operational Stage

During the operational stage of the activity, the ER Program CWAD representative will be notified immediately if water is encountered and/or may be pumped from an area and discharged. The field crew will be mobilized to obtain all required equipment, transport it to the field area, and pump the water to the containment equipment (if required). The sampling crew will be mobilized to perform all required water quality sampling. The CWAD representative will coordinate all field sampling and laboratory analysis, receive and interpret analytical results, and make decisions regarding the disposition of the water based on the analytical results.

4.2.1 Water Quality Parameters

One water sample will be collected directly in the field from the depression or containment using a peristaltic pump. All samples (except for water originating in process waste valve vaults which is considered contaminated) will be analyzed for gross alpha and gross beta. Consequently, Standard Operating Procedures (SOP's) for sampling, preservation, and packaging of samples for these analyses will be strictly followed by the sampling crew. Gross alpha and beta screening of the samples will be performed by the Building 881 general laboratory. Receipt of the laboratory analytical results by the CWAD representative may take one to two days. In addition to these parameters, pH and specific

conductivity will be measured and recorded in the field following field measurement SOP's. The following table presents the current limits for each of these parameters.

<u>PARAMETER</u>	<u>LIMIT</u>
Gross Alpha	40 pC/l
Gross Beta	50 pC/l
pH	6.0 - 9.0
Specific Conductivity	700 umhos/cm

4.2.2 Control and Disposition

If any water sample exceeds the limits for gross alpha, gross beta, or pH, the water in the depression or containment from which that sample was collected will be treated as contaminated. Additional analyses may be performed for specific radionuclides if gross alpha or beta exceed the limits or if further characterization of the water or the site is warranted. If any water sample exceeds the limit for specific conductivity, additional analyses should be performed to determine the individual parameters contributing to the high total dissolved solids. If the additional analyses indicate high concentrations of other individual parameters, the water may be considered contaminated. If the additional analyses indicate no high concentrations of individual parameters, the water may be considered clean, depending on the actual magnitude of specific conductivity. If the water sample does not exceed the limits for gross alpha, gross beta, pH, or specific conductivity, the water will be considered clean. The actual interpretation of analytical results and the final disposition of the water will, however, be the ultimate responsibility of the ER program CWAD representative.

If the activity or source of water is located in an area of known or suspected contamination (such as in or near a SWMU with contaminated surface water, groundwater, or soils), then additional chemical analyses may be performed for specific known or likely water quality parameters if deemed appropriate by the CWAD representative. Specific SOP's for collecting samples for these parameters must be strictly followed. In this case, the analyses may be performed by a DOE-approved contract laboratory, if deemed appropriate, and receipt of analytical results may take considerably longer than two days.

Water considered contaminated will be pumped to either 55-gallon drums or tanker trucks, depending on the estimated total volume of water to be removed. As many drums or trucks will be utilized as are required to contain all of the water pumped. The water will be transferred to the process waste treatment facility (Building 374) for treatment. If, for some reason, it is not possible or practical to treat this water in the process waste treatment

facility, the water will be stored in a safe area until another treatment or disposal alternative is selected and implemented. Water that is confirmed to be clean will be pumped to the nearest storm drain.

The CWAD representative will document and file all of the water control activities including pumping, containment, sampling, results of analysis, transfer, storage, and final disposition including treatment or discharge to storm drains or the ground. The dates of all activities including the first encounter of the source of water will also be recorded.

ATTACHMENT 1

Contacts at ER Program Clean Water Act Division (CWAD):

- Leslie Dunstan (966-5603)
- Ralph Hawes (966-2582)